

REMARKS

The Examiner has rejected claims 1-48 under 35 U.S.C. § 103(a) as being unpatentable over CA '399 in view of Fossum et al or Lundgren et al.

Claims 1-48 have been amended so that they are now directed to a process for making a bleached mechanical pulp. There are substantial differences between mechanical and chemical pulping. These differences are well known in the wood pulp bleaching art.

Regarding CA '399, it has a printed publication date of January 21, 2000. The above-captioned patent application claims priority from Provisional Application No. 60/207,205 ("PA '205"), filed May 26, 2000, and Provisional Application No. 60/178,704, filed January 28, 2000 ("PA '704"). Both PA '205 and PA '704 were on file in the U.S. less than one year prior to the date of the printed publication CA '399. Therefore, CA '399 is not citable as a prior art reference against the claims of the subject patent application.

Lundgren et al is directed to the bleaching of chemical pulp. The claims 1-48 as amended relate instead to making a bleached mechanical pulp.

Lundgren et al specifies initially treating chemical pulp with a chelant like DTPA. Peroxide bleaching is not performed in this initial step of Lundgren et al. Next, the Lundgren et al process removes the chelated metals from the chemical pulp by washing. These steps are not conducted in the claimed invention in the manner taught by Lundgren, et al except in claim 16 for example.

Then, Lundgren et al bleaches chelant-treated, washed chemical pulp with peroxide and oxygen. The claims of the present invention are directed to bleaching mechanical pulp with peroxide and a magnesium compound.

The pH range of pH 7-13 of Lundgren et al may be acceptable for chemical pulp bleaching, but not for the bleaching of mechanical pulping using peroxide and a magnesium compound. The claims of this invention are directed to bleaching at a pH of 8.5 or less.

Oxygen bleaching is not typically used in the bleaching of mechanical pulps. On the other hand, oxygen is commonly used in bleaching chemical pulps as taught by Lundgren et al. Applicants do not claim oxygen bleaching.

Fossum et al is also directed to bleaching of chemical pulp. The claims of the subject invention relate instead to the bleaching of mechanical pulp.

Fossum et al also specifies that the chemical pulp to be bleached is immediately subjected to alkaline extraction (E). Extraction is only performed as part of a bleaching sequence on chemical pulps. It is not preformed on mechanical pulps as claimed by applicants. It is undesirable to extract lignin when mechanical pulp is employed as that would reduce yield. Applicant teaches bleaching mechanical pulp to maintain yields as high as possible and to correspondingly reduce costs.

Fossum et al employs magnesium compounds not as a source of alkali but only as a source of magnesium ions to protect the cellulose. A major purpose of the magnesium compounds in the claims of applicants is in fact as a source of alkali.

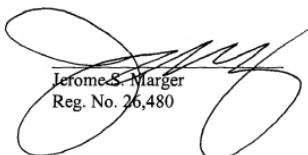
Absent some motivation, incentive, or suggestion in the prior art supporting the modification of a reference, obviousness cannot be established by combining the teachings of the prior art to modify the reference for purposes of producing the claimed invention. To make an obviousness rejection based on a combination of references, the Examiner must be able to point

to a reference which suggests the combination. Absent such a suggestion, the Examiner has impermissibly used applicant's teachings to examine the prior art for the claimed elements, and combine them as claimed.

In summary, for the reasons set forth above, the applicable cited references, individually or in combination, do not teach or suggest the process set forth in claims 1-48 of the above-captioned invention.

Accordingly, this application is now in condition for allowance, and the Examiner is requested to pass this application to issue forthwith. If any matters are later deemed unresolved by the Examiner, he is encouraged to call the Attorney for Applicants to discuss same.

Respectfully submitted,



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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims

1. (Amended) A process of making a bleached mechanical wood pulp comprising:
 - providing an aqueous slurry of mechanical wood pulp;
 - combining the mechanical wood pulp with a bleaching mixture comprising hydrogen peroxide and a magnesium compound selected from the group consisting of magnesium hydroxide, magnesium oxide and mixtures thereof, to form a bleaching pulp mixture; and
 - maintaining the bleaching pulp mixture at a pH of 8.5 or less for a time sufficient to produce the bleached mechanical wood pulp.

16. (Amended) A process of making a bleached mechanical wood pulp comprising:
 - providing an aqueous slurry of mechanical wood pulp;
 - adding a first chelating agent to said mechanical wood pulp;
 - providing a bleaching mixture comprising hydrogen peroxide and a magnesium compound selected from the group consisting of magnesium hydroxide, magnesium oxide and mixtures thereof;
 - washing the mechanical wood pulp, and optionally dewatering the slurry to form a washed mechanical wood pulp;
 - combining the washed mechanical wood pulp with said bleaching mixture; and
 - maintaining the bleaching pulp mixture at a pH of 8.5 or less for a time sufficient to produce the bleached mechanical wood pulp.

32. (Amended) A process of making a bleached mechanical wood pulp comprising:

providing an aqueous slurry of mechanical wood pulp;

combining the mechanical wood pulp with a bleaching mixture comprising hydrogen peroxide and a magnesium compound selected from the group consisting of magnesium hydroxide, magnesium oxide and mixtures thereof, and with a recycled filtrate residual hydrogen peroxide, optionally, fresh hydrogen peroxide, to form a bleaching pulp mixture;

maintaining the bleaching pulp mixture at a pH of 8.5 or less for a time sufficient to produce the bleached mechanical wood pulp;

separating the bleached mechanical wood pulp from a filtrate comprising water and residual hydrogen peroxide; and

recycling at least a portion of said filtrate as at least a portion of said bleaching mixture.